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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/882,410

06/15/2001

Shuo-Yen Robert Li

Li 21

8409

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08/24/2005

AKIN GUMP STRAUSS HAUER & FELD L.L.P.
ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103

EXAMINER

PEZZLO, JOHN

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,410

Applicant(s)

LI, SHUO-YEN ROBERT

Examiner

John Pezzlo

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 9-28 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/15/01, 6/20/05
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

I. Claims 9-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Song (US 5,963,554).

Note: With respect to the claims, the examiner has rejected the claims based on the case where "n" and "m" are equal to the same number, which is supported by the drawings 73A and 73B and the specification and the claims, which do not specify that "n" and "m" have to be different numbers.

1. Regarding claim 9 – Song discloses a first switching fabric (horizontal PCB's) having a configuration based on a first one of the implementation levels, refer to Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62. Song discloses the one implementation, which utilizes printed circuit boards.

Song discloses a second switching fabric (vertical PCB's), coupled to the first switching fabric, having a configuration based on a second one of the implementation levels compatible with the first switching fabric, refer to Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62. Song discloses another implementation, which utilizes orthogonal packaging.

2. Regarding claim 11 – Song discloses a first switching element being a primitive switching circuitry or based on a multi-stage switching network constructed from a recursive 2-stage construction (refer to Figure 9, 2-stage Banyan switch), said construction having a configuration based on one of the implementation levels, refer to Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62. Song discloses the one implementation, which utilizes printed circuit boards.

Song discloses a second switching element, coupled to the first switching element, being a primitive switching circuitry or based on a multi-stage switching network constructed from a recursive 2-stage construction (refer to Figure 9, 2-stage Banyan switch), said construction having a configuration based on one of the implementation levels compatible with the first switching element, refer to Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62. Song discloses another implementation, which utilizes orthogonal packaging.

3. Regarding claims 13 and 19 and 23 – Song discloses n first switching elements (n equals 4, switching printed circuit boards) implemented by a recursive 2-stage construction technique, each of the first switching elements having m (m equals 4, output ports per printed circuit board) output ports and having a configuration based on a first one of the implementation levels, refer to

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Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62. Song discloses the one implementation, which utilizes printed circuit boards.

Song discloses m second switching elements (m equals 4, switching printed circuit boards) implemented by a recursive 2-stage construction technique, each of the second switching elements having n (n equals 4, output ports per printed circuit board) input ports and having a configuration based on a second one of the implementation levels, refer to Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62. Song discloses another implementation, which utilizes orthogonal packaging.

Song discloses an interface circuit (back plane board, refer to Figure 13) interposed between the n first switching elements and the m second switching elements, wherein each of the first switching elements has a configuration based on a first one of the implementation levels (Song discloses the one implementation, which utilizes printed circuit boards) compatible with the interface circuit and each of the second switching elements has a configuration based on a second one of the implementation levels (Song discloses another implementation, which utilizes orthogonal packaging) also compatible with the interface circuit, the interface circuit having: mn input ports (16 input ports – 4 per board) to cooperatively interconnect with the mn outputs (16 output ports – 4 per board) of the n first switching elements, refer to Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62.

Song discloses nm output ports (16 output ports – 4 per board to cooperatively interconnect with the nm inputs (16 input ports – 4 per board) of the m second switching elements, refer to Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62.

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Song discloses interconnections between the mn input ports and the mn output ports corresponding to a pre-determined exchange, Song discloses the shuffle exchange, refer to Figure 4, which is on the back board, and column 8 lines 37 to 63.

4. Regarding claims 14, 15, 16, 20, 21, 22, 24, 25, and 26 – Song discloses the pre-determined exchange corresponds to an output exchange relative to the first switching elements as well as an input exchange relative to the second switching elements, the shuffle, which is carried out in the back board allows for the alignment of the input and output ports, refer to Figure 4, which is on the back board and column 5 lines 45 to 65.

6. Regarding claims 17 and 27 – Song discloses the first switching elements are stacked in n parallel first planes and the second switching elements are stacked in m parallel second planes orthogonal to the first planes, refer to Figures 9, 13, and 14 and column 6 lines 9 to 26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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II. Claims 10, 12, 18, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song (same as above).

1. Regarding claims 10, 12, 18, and 28 – Song discloses printed circuit board implementation, orthogonal packaging, and interface-board packaging, refer to Figures 9 and 13 and column 7 lines 16 to 67 and column 8 lines 1 to 62.

Song does not expressly disclose inside-chip implementation or fiber-array packaging.

Song suggests the use of semiconductors on the printed circuit boards, refer to column 5 lines 29 to 45.

At the time of the invention, it would have been obvious to an ordinary person of skill in the art to fabricate the switches utilizing inside-chip implementation or fiber-array packaging. The motivation and benefit of doing so, because it is known to fabricate circuits on ASIC's and replicate the ASIC's many times to form a large scale switch in order to gain the effect of large scale production (economy of scale) to reduce costs and gain the benefits of modular construction.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Abu-Amara et al. (US 6,026,092) discloses a high performance fault tolerant switching system for multimedia satellite and terrestrial communications networks.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pezzlo whose telephone number is (571) 272-3090. The examiner can normally be reached on Monday to Friday from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C.

or faxed to:

(571) 273-8300

For informal or draft communications, please label "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to:

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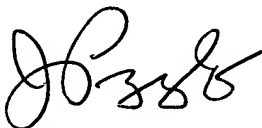
2A15

500 Dulany Street

Alexandria, VA, 22313.

John Pezzlo

18 August 2005


JOHN PEZZLO
PRIMARY EXAMINER